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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,735	11/27/2001	Jason Sefcik	017750-597	9867

7590 10/19/2006

Patrick C. Keane
BURNS, DOANE, SWECKER & MATHIS, L.L.P.
P.O. Box 1404
Alexandria, VA 22313-1404

EXAMINER	
PERUNGAVOOR, SATHYANARAYA V	
ART UNIT	**PAPER NUMBER**
2624	

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/993,735	SEFCIK, JASON	
	Examiner	Art Unit	
	Sath V. Perungavoor	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 July 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,9-22,24-37 and 39-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,9-22,24-37 and 39-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant(s) Response to Official Action

[1] The response filed on July 27, 2006 has been entered and made of record.

Response to Arguments

[2] Presented arguments have been fully considered but are held unpersuasive. Examiner's response to the presented arguments follows below.

Claim Rejections - 35 USC § 103

Summary of Arguments:

Applicant argues the following:

1. The combination Lo and Hanna does not disclose, "subtracting stabilization difference values from positional difference values" [Remarks: page 14, para. 2].
2. Stabilization values as recited in the claims represent the amount of movement in the background portion of an image between successive frames of an image [Remarks: page 14, para. 2].

Applicant requests the withdrawal of the rejection.

Examiner's Response:

Examiner respectfully disagrees. Examiner contends the following:

1. Hanna discloses jitter/error (i.e. stabilization difference values) compensation for the positional estimate, through the subtraction of stabilization differences from positional differences, (see, abstract and col. 6, lines 13-20).
2. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e.,

stabilization values representing the amount of movement in the background portion of an image between successive frames of an image) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Accordingly, Examiner maintains the rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

[3] Claims 1-7, 9, 10, 16-22, 24, 25, 31-37, 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lo et al. ("Lo") [US 5,062,056] in view Hanna [US 5,488,675].

Regarding claim 1, Lo discloses the following claim limitations:

A method for estimating a position of moving objects in a set of image data, comprising the steps of *[Figure 1]*: identifying a position (i.e. track gate is positioned to the target's position, hence position is known) of an object (i.e. target) in a first frame (i.e. reference image) of image data acquired at a first time *[Column 5 Lines 1-4]*; determining that the object (i.e. target) is undetected (i.e. not centered in track gate) in a second frame (i.e. frame F_{i+1}) of image data acquired at a second time *[Column 5*

Lines 34-36]; estimating movement of the object (i.e. target) to determine its estimated position (i.e. estimated target trackpoint) in the second frame of image data by compensating for image destabilization (i.e. motion of the sensor) and by using at least one of *velocity* and acceleration of the object and *time* between frames of image data; *[Column 5 Lines 31-55]* and using the estimated position (i.e. target trackpoint) to determine a position of the object (i.e. target) in a third frame (i.e. subsequent image) of image data acquired at a third time *[Column 6 Lines 37-40]*; and

Lo does not explicitly disclose the following claim limitations:

subtracting stabilization difference values from positional difference values for each frame of image data to generate stabilized positional difference values.

However, in the same field of endeavor Hanna discloses the deficient claim limitations, as follows:

subtracting stabilization difference values (i.e. error) from positional difference values for each frame of image data to generate stabilized positional difference values *[Column 6, Lines 13-20]*.

Lo and Hanna are combinable because they are from the same field of object tracking.

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Lo with Hanna to incorporate stabilization values, the motivation being to obtain stable estimates of location *[Column 1, Lines 49-53]*.

Regarding claim 2, Lo discloses all the claim limitations, as follows:

The method of claim 1, wherein the step of identifying comprises the step of: maintaining a database of positional values of the object. *[Column 5 Lines 1-4 and 110 on Figure 1; Positional values are stored in the reference memory.]*

Regarding claim 3, Hanna discloses all the claim limitations, as follows:

The method of claim 1, wherein the step of identifying comprises the step of: maintaining a database of stabilization values of the object *[Column 6, Lines 13-16]*.

Regarding claim 4, Lo discloses all the claim limitations, as follows:

The method of claim 1, wherein the step of determining comprises the step of: retrieving positional values of the object from a database of positional values *[Column 5 Lines 1-4 and 110 on Figure 1; Positional values are stored in the reference memory and used in computations.]*.

Regarding claim 5, Hanna discloses all the claim limitations, as follows:

The method of claim 1, wherein the step of determining comprises the step of: retrieving stabilization values of the object from a database of stabilization values *[Column 6, Lines 13-20]*.

Regarding claim 6, Lo discloses all the claim limitations, as follows:

The method of claim 1, wherein the step of estimating comprises the step of: calculating difference values between the first frame of image data and the second frame of image data for positional values of the object *[Column 5 Lines 48-51]*.

Regarding claim 7, Hanna discloses all the claim limitations, as follows:

> The method of claim 1, wherein the step of estimating comprises the step of:
>
> calculating difference values between the first frame of image data and the second frame of image data for stabilization values of the object *[Column 4, Lines 30-36 and 55-60]*.

Regarding claim 9, Lo discloses all the claim limitations, as follows:

> The method of claim 1, wherein the step of estimating comprises the step of:
>
> determining a data time interval using a time between frames of image data *[Column 5 Lines 50-51; Time interval between scenes (i.e. frames) is determined.]*.

Regarding claim 10, Lo discloses all the claim limitations, as follows:

> The method of claim 9, wherein the step of estimating comprises the step of:
>
> determining an absolute displacement of the object by summing the stabilized positional difference values over the data time interval *[Column 5 Lines 48-51; The interval is only one, hence the sum is self contained.]*.

Regarding claims 16-22, 24, 25, 31-37, 39 and 40 all claimed limitations are set forth and rejected as per discussion for claims 1-7, 9 and 10.

[4] Claims 11-15, 26-30 and 41-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lo et al. ("Lo") [US 5,062,056] in view Hanna [US 5,488,675] further in view of Browne [NPL document titled, previously cited].

Regarding claim 11, Lo and Hanna disclose the claim limitations as set forth in the discussion for claim 10.

Lo and Hanna do not explicitly disclose the following claim limitations:

> The method of claim 10, wherein the step of estimating comprises the step of:
>
> calculating a constant acceleration of the object during the data time interval using a predetermined acceleration function.

However, in the same field of endeavor Browne discloses the deficient claim limitations, as follows:

> The method of claim 10, wherein the step of estimating comprises the step of:
>
> calculating a constant acceleration of the object during the data time interval using a predetermined acceleration function. *[Equations in 4.4 and 4.5 on Page 41; Disclosed "a" meets this limitation.]*

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Lo and Hanna with Browne to calculate a constant acceleration, since the disclosed equations are commonly used to calculate velocity, acceleration and position. Furthermore, Lo's invention inherently uses these equations and does not disclose it explicitly.

Regarding claim 12, Lo and Hanna disclose the claim limitations as set forth in the discussion for claim 10.

Lo and Hanna do not explicitly disclose the following claim limitations:

> The method of claim 11, wherein the step of estimating comprises the step of: calculating a current velocity of the object during the data time interval using a predetermined velocity function.

However, in the same field of endeavor Browne discloses the deficient claim limitations, as follows:

> The method of claim 11, wherein the step of estimating comprises the step of: calculating a current velocity of the object during the data time interval using a predetermined velocity function. *[Equations in 4.4 and 4.5 on Page 41; Disclosed "v" meets this limitation.]*

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Lo and Hanna with Browne to calculate a current velocity, since the disclosed equations are commonly used to calculate velocity, acceleration and position. Furthermore, Lo's invention inherently uses these equations and does not disclose it explicitly.

Regarding claim 13, Lo and Hanna disclose the claim limitations as set forth in the discussion for claim 10.

Lo and Hanna do not explicitly disclose the following claim limitations:

> The method of claim 12, wherein the step of estimating comprises the step of: calculating an estimated movement of the object from the constant acceleration and current velocity using a predetermined position function.

However, in the same field of endeavor Browne discloses the deficient claim limitations, as follows:

> The method of claim 12, wherein the step of estimating comprises the step of: calculating an estimated movement of the object from the constant acceleration and current velocity using a predetermined position function. *[Equations in 4.4 and 4.5 on Page 41; Disclosed "r" meets this limitation.]*

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Lo and Hanna with Browne to calculate an estimated movement, since the disclosed equations are commonly used to calculate velocity, acceleration and position. Furthermore, Lo's invention inherently uses these equations and does not disclose it explicitly.

Regarding claim 14, Hanna discloses all the claim limitations, as follows:

> The method of claim 13, wherein the step of estimating comprises the step of: calculating an actual movement of the object by adding stabilization difference values to the estimated movement of the object. *[Column 6, Lines 13-20].*

Regarding claim 15, Lo discloses all the claim limitations, as follows:

> The method of claim 14, wherein the step of estimating comprises the step of: calculating an estimated position (i.e. U_N) of the object in the second frame of image

data by adding the actual movement (i.e. $k.V$) of the object to the position (i.e. U_{N-K}) of the object in the first frame of image data *[Column 7 Lines 10-20]*.

Regarding claims 26-30 and 41-45 all claimed limitations are set forth and rejected as per discussion for claims 11-15.

Conclusion

[5] THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

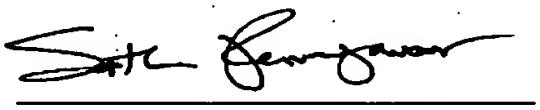
[6] Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Sath V. Perungavoor whose telephone number is (571) 272-7455. The examiner can normally be reached on Monday to Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Bhavesh M. Mehta whose telephone number is (571) 272-7453, can be reached on Monday to

Friday from 9:00am to 5:00pm. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dated: October 13, 2006

By: 

Sath V. Perungavoor
Telephone: (571) 272-7455

For: Bhavesh M. Mehta